IX. *An Account of some Trees discovered under-ground on the Shore at* Mount's-Bay *in* Cornwall : *In a Letter from the Rev.* Mr. William Borlase, *F. R. S. to the Rev.* Dr. Lyttelton, *Dean of* Exeter.

Reverend Sir,   Ludgvan, Jan 24. 1757.

Read Feb. 10, 1757.   BEING an airing the other day with Mrs. Borlase, on the sands below my house, we perceived the sands betwixt the Mount and Penzance much washed into pits, and bare stony areas, like a broken causey. In one of the latter, Mrs. B. as we passed by, thought she saw the appearance of a tree ; and, upon a review, I found it to be the roots of a tree, branching off from the trunk in all directions. We made as much haste down to the same place in the afternoon as we could, and with proper help to make a farther examination. I measured and drew the remains ; and about 30 feet to the west found the roots of another tree, but without any trunk, tho' displayed in the same horizontal manner as the first. Fifty feet farther to the north we found the body of an oak, three feet in diameter, reclining to the east. We dug about it, and traced it six feet deep under the surface ; but its roots were still deeper than we could pursue them. Within a few feet distance was the body of a willow, one foot and a half in diameter, with the bark on ; and one piece of a large hazel-branch, with its bark

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on. What the two firſt trees were, it was not eaſy to diſtinguiſh, there being not a ſufficiency remaining of the firſt, and nothing but roots of the ſecond, both pierced with the teredo, or augur-worm. Round theſe trees was ſand, about ten inches deep, and then the natural earth, in which theſe trees had formerly flouriſhed. It was a black marſh-earth, in which the leaves of the juncus were intirely preſerved from putrefaction. Theſe trees were 300 yards below full-ſea-mark; and, when the tide is in, have at leaſt 12 feet of water above them: and doubtleſs there are the remains of other trees farther towards the ſouth, which the ſea perpetually covers, and have more than 30 feet water above them. But theſe are ſufficient to confirm the ancient tradition of theſe parts, that St. Michael's mount, now half a mile incloſed with the ſea, when the tide is in, ſtood formerly in a wood. That the wood conſiſted of oak, very large, hazel and willow trees, is beyond diſpute. That there has been a ſubſidence of the ſea-ſhores hereabouts, is hinted in my letter to you, p. 92; and the different levels and tendencies, which we obſerved in the poſitions of the trees we found, afford us ſome material inferences, as to the degree and inequalities of ſuch ſubſidences in general; as the age, in which this ſubſidence happened (near 1000 years ſince at leaſt) may convince us, that when earthquakes happen, it is well for the country, that they are attended with ſubſidences; for then the ground ſettles, and the inflammable matter, which occaſioned the earthquake, has no longer room to ſpread, unite, and recruit its forces, ſo as to create frequent and ſubſequent earthquakes: whereas, where
there

there are earthquakes without proportionable fub-fidences, there the caverns and ducts under-ground remaining open and unchoaked, the fame caufe, which occafioned the firft, has room to revive and renew its ftruggles, and to repeat its defolations or terrors; which is moft probably the cafe of Lifbon. I am, Sir,

Your moft affectionate

and obliged humble Servant,

Wm. Borlafe.

X. *Experiments on applying the Rev. Dr. Hales's Method of diftilling Salt-water to the Steam-Engine. By* Keane Fitzgerald, *Efq; F. R. S.*

Read Feb. 17. 1757. ON reading Dr. Hales's account of purifying falt water, by blowing fhowers of air thro', it occurred to me, that fomething of the kind might be applied with advantage to the fteam or fire-engine, by increafing the quantity of fteam, and confequently diminifhing the quantity of fuel otherwife neceffary.

As the ftrength of fteam raifed from boiling water is always in a fluctuating ftate, and, by the beft experiments hitherto made, has never been found above $\frac{1}{10}$ ftronger, or weaker, than air; I was in doubt, whether fteam, produced by this method, would